THE PACKET

CISCO SYSTEMS CUSTOMER SERVICES NEWSLETTER

BGP — A Tale of Two Napkins

At an Internet Engineering Task Force (IETF) conference last January, Kirk Lougheed and Len Bosack of cisco and Yakov Rechter of IBM sat down in the meeting hall cafeteria and wrote a new routing protocol. What has since become RFC 1105, the Border Gateway Protocol (BGP), is still known to some as the "Two-Napkin Protocol," in reference to the handy medium upon which the engineers first drafted it.

RFC 1105, The Border Gateway Protocol, is still known to some as the Two-Napkin Protocol.

According to Lougheed, cisco's director of software engineering, BGP developed as a solution to the deficiencies of EGP. The problem evolved with the exponential increase in the number of Internet hosts, and with its expanding topology. "The Internet Protocol suite succeeded beyond anyone's expectations," Lougheed explains. "EGP was simply not designed to handle networks of this size." With the Internet's diversification and expanding routing domains, network managers soon needed to execute some control over their resources by introducing different types of user policies. EGP made no provisions for such policies. Nor did it scale to large numbers of networks. The networking community began to express a degree of concern that the core routing system would simply fail at some point. Moreover, EGP showed further signs of weakness as increasingly large routing updates were sent over the Internet. Datagrams containing these updates outgrew the ARPANET's maximum transport size of 1008 bytes, thus requiring fragmentation before transmission.

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cisco Makes Bold Entry to OSI Marketplace, Designs Largest OSI Network Demo to Date

The most complex OSI network ever assembled ran throughout the Interop 89 tradeshow this year in the San Jose Convention Center, Northern California. All together, about 14 vendors supporting the OSI network protocol successfully interconnected their systems to form the Interop OSI demo network.

cisco played a major role in the triumph of the OSI demo. Routers from cisco — running the ISO CLNS (Connectionless Network Services) protocol — managed

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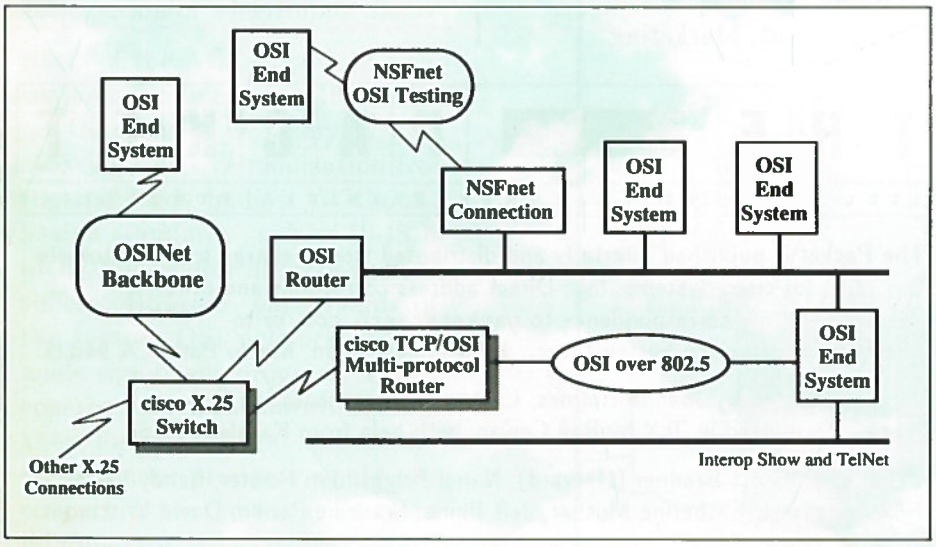

cisco designed the Open Standards Interconnect (OSI) multi-vendor network demonstrated at the premier computer network-industry tradeshow, Interop 89.

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